

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
10 March 2005 (10.03.2005)

PCT

(10) International Publication Number  
**WO 2005/022412 A1**

(51) International Patent Classification<sup>7</sup>: **G06F 17/30**

(74) Agent: **KIM, Seog-Hyun**; 9th Floor, Daekyung Building,  
2-ka, Taepyung-ro, Chung-ku, Seoul 100-724 (KR).

(21) International Application Number:  
PCT/KR2004/002117

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 23 August 2004 (23.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
10-2003-0060528 30 August 2003 (30.08.2003) KR

(71) Applicant (*for all designated States except US*): **ISTECH CO., LTD.** [KR/KR]; Hyundai-Townville 506, 848-1 Janghang-dong, Ilsan-gu, Goyang-si, Gyeonggi-do 411-380 (KR).

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

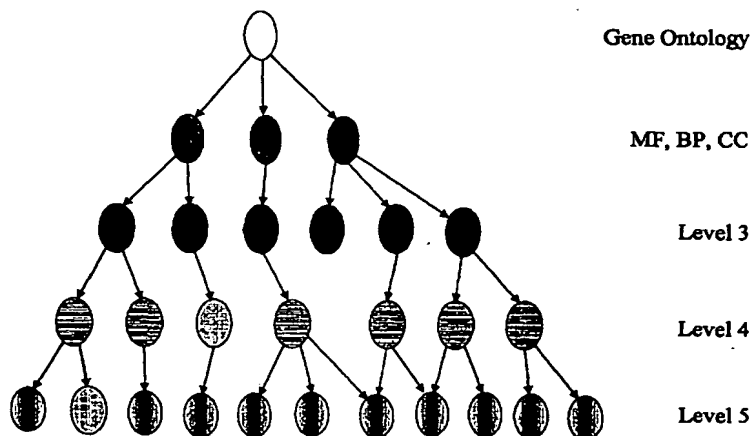
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **KIM, Yang-Suk** [KR/KR]; Hyundai-Townville 506, 848-1 Janghang-dong, Ilsan-gu, Goyang-si, Gyeonggi-do 411-380 (KR). **HUR, Jung-Uk** [KR/KR]; 79-6 Jeomchon-dong, Mungyeong-si, Gyeongsangbuk-do 745-886 (KR). **LEE, Sung-Geun** [KR/KR]; LG Metrocity Apt. 104-1504, Yongho-dong, Nam-gu, Busan 608-090 (KR).

Published:  
— with international search report

[Continued on next page]

(54) Title: A SYSTEM FOR ANALYZING BIO CHIPS USING GENE ONTOLOGY AND A METHOD THEREOF



(57) Abstract: Disclosed is a system for analyzing a bio chip using Gene Ontology(hereinafter referred to "GO") and a method thereof. According to a preferred embodiment of the present invention, it is provided a system for analyzing a bio chip comprising : a GO(gene ontology) term assigning part for receiving a statistical clustering data obtained from empirical results of the bio chip, and assigning relevant GO terms to every gene contained in each cluster; a GO code converting part for converting the GO terms assigned by the GO term assigning part to the genes into GO codes, the GO code comprising a group of predetermined numbers; and a biological meaning extracting part for calculating pseudo distances between one of GO terms on GO tree structure contained in a predetermined group and the GO terms corresponding to the genes contained in the cluster, and calculating at least one of average pseudo distance or maximum pseudo distance of the calculated pseudo distances, and calculating at least one of average pseudo distances or maximum pseudo distances for all GO terms included on GO tree structure in the predetermined group and the GO terms corresponding to the genes contained in the cluster, and determining an optimum GO term matching with the cluster.

WO 2005/022412 A1



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*